REMARKS

Claims

Claims 13, 15, 21, 22, 25–33 and are currently under examination with claims 1–12, 16, and 20 withdrawn due to restriction/election and claims 14, 17–19, 23, 24 and 34 cancelled without prejudice or disclaimer. Claims 35 and 36 are added by this paper.

Claim amendments

Claim 13 has been amended. Amended claim 13 incorporates the subject matter of claim 34, which is hereby cancelled without prejudice or disclaimer. Applicants have amended the claim to purely facilitate prosecution. No agreement is to be implied. The subject matter cancelled from claims 13 and 23 can be pursued separately in a divisional or continuation application.

Claims 21 and 22, which are now recited in independent form, independently incorporate the elements of claims 13 and 35. The subject matter of these claims is supported, at least, by the disclosure contained in the Examples. See, for example, pages 22–26 of the originally-filed specification.

Claim 25, in its amended form, is made dependent on claim 13 and recites additional aspects of the molecules of the present invention. The claim is in compliance with §112, ¶4. The amendment of claim 25 is supported by the disclosure contained in, for example, paragraphs [0001], [0024] and [0038] of the published application.

New claim 35 is supported by the disclosure contained in, for example, the ABSTRACT and Examples of the originally-filed specification. Support for new claim 36 can be found, for example, original claim 12 and the disclosure provided in the Examples (i.e., an embodiment of the present invention relating to process for the preparation of such polypeptides by cultivation of a host organism and *isolation* of the corresponding polypeptide from the culture).

Claim objections

The Examiner is thanked for her careful review of the claims. The claims have been amended as per the Examiner's suggestion(s), rendering the objection thereof moot. Claims 21 and 22 are now recited in independent form.

Withdrawal of the objection is respectfully requested.

Rejections under §112, ¶2

Applicants disagree with the PTO's contention that recitation of fragment sequences without a reference to one or more polypeptide sequences renders the claims indefinite. However, in order

to facilitate prosecution, claims 21 and 22 have been amended. Withdrawal of the rejection is respectfully requested.

"New matter" rejection under 35 U.S.C. §112, ¶1

The rejection, not specifically discussed herein, is moot in view of the forgoing amendments. Withdrawal of the rejection is respectfully requested.

Rejection under 35 U.S.C. §112, ¶1

At the outset, it is submitted that in view of the forgoing amendments and the Examiner's comments at page 8, first complete paragraph of the Office Action, this rejection is moot. More specifically, the Examiner concedes that "the specification discloses only the nucleic acid sequences SEQ ID NO: 1, 3, and 5 encoding the polypeptides of SEQ ID NO: 2, 4, and 6, respectively and the variants of SEQ ID NO: 2 in clones 1−11." The polypeptides are now claimed in terms of specific sequences. This is not to imply that the original claim scope was problematic under US law. Thus it is respectfully submitted that the foregoing amendments render moot the written description rejection.

Applicant further asserts that the claims are in compliance with the PTO's new *Written Description Guidelines*. See for example, Example 10 beginning on Page 33 of the *Training Materials* (Rev. 1, March 25, 2008). See also, Example 6 at page 21 of the Guidelines. The 'comprising' language, as used herein, fully complies with the PTO's published guidelines. To hold the subject matter of the present claims as lacking adequate written description would be contrary to the agency's own published guidelines. Withdrawal of the rejection is respectfully requested.

The contention that "the specification does not provide support for any polypeptide 'comprising' fragments of polypeptide of SEQ ID NOs: 2, 4, or 6 or variants of SEQ ID NO: 2 in clones 1−11" is respectfully traversed. Applicants' specification expressly teaches that Phl p4 polypeptide of the invention comprises polypeptides having the polypeptide sequence set forth in SEQ ID NOs: 2, 4, or 6 or variants of SEQ ID NO: 2 in clones 1−11. See, for example, paragraph [0042] of the published application and the disclosure contained in the Tables (with respect to the variant sequences). In the Examples section, two such Phl p 4 fragments corresponding to amino acids 1-200 and 185-500 of the Phl p4 polypeptides (SEQ ID NOs: 2, 4, and 6 each comprise 500 amino acid residues) are expressly described. Thus the structural information of at least six such fragment sequences (i.e., N-terminal and C-terminal fragments of SEQ ID NOs: 2, 4, and 6) are explicitly taught by the instant application. Other representative examples of such fragment sequences, for example, P1-P6 (SEQ ID NOs: 27-32) obtained from the amino acid sequencing of

the purified and fragmented Phl p 4 allergens are additionally described in the instant application. See also the sequence listing page. As such, the PTO's contentions that the fragment sequences lack adequate written description is without merit. Moerover, given the detailed disclosure in Applicants' specification, *any* fragment of the claimed polypeptide sequences can "at once be envisaged" by one of ordinary skill in the art. Explicit recitation of each and every sequence is not necessary at all. See, *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962). Withdrawal of the rejection is respectfully requested.

Enablement

Based on the Examiner's statement in the paragraph bridging pages 9 and 10 of the Office Action, further in view of the forgoing amendments, it is submitted that the alleged lack of enablement, at least with respect to the structure of the claimed polypeptides, is moot. Applicants' claims are directed to polypeptide molecules and fragments thereof comprising specific sequences. Variants of the claimed molecules, comprising, for example, the amino acid variations at the recited position in the polypeptide sequence of SEQ ID NO:2, are further disclosed. The detailed disclosure contained in Applicants' specification (as substantiated by the disclosure of three polypeptide sequences and 11 other clonal variants) provides a detailed description of the structure/activity of the claimed variant sequences and fragments. See also, the sequence listing page and the tables. The biological activities of such polypeptide molecules, for example, with respect to their reactivity to IgE molecules, are further disclosed. See, the disclosure in Fig. 5 and the description thereof at page 6 of the present application.

Claims directed to the pharmaceutical composition/vaccines

In the paragraphs bridging pages 11 and 12, the Office Action alleges that the pharmaceutical compositions and/or vaccines of the present invention are non-enabled. This contention is respectfully traversed.

At the outset, Applicants courteously submit that the Office Action fails to present any evidence which suggests the pharmaceutical compositions, as claimed herein, are not enabled. In the absence of such evidence, the rejection is deficient under controlling case law.

The burden is upon the Patent and Trademark Office to provide evidence shedding doubt that the invention can not be made and used as stated; see for example, In re Marzocchi, 439, F. 2d 220, 169 USPQ 367 (CCPA 1971). Moreover, Applicants' specification teaches that molecules of the present invention are useful formulation of vaccines and/or pharmaceutical compositions. See the generic teachings offered in the paragraph bridging page 15 and 16 of the present application.

In relation to a disclosure on the utilization of Phl p 4 polypeptides as a pharmaceutical composition, the Examiner is courteously invited to review the disclosure contained in the Examples of the present application. See, for example, the paragraphs bridging page 7, line 28 to page 8, line 24 of the instant specification, as originally filed. In this regard, Applicants' specification expressly teaches that fragment and/or recombinant forms of allergens, which exhibit a different IgE reactivity profile compared to the natural allergen (nPhl p 4), can be utilized as pharmaceutical compositions or vaccines. Rationale for the use of the molecules of the instant invention in the desensitization of a subject suffering from allergy is also provided. See, the page 15, lines 9–27; page 16, lines 19–24 of the specification, as originally filed.

Moreover, the disclosure in page 8, lines 3–17 of Applicants' specification and the cited Schramm reference expressly teach that the use of hypoallergenic peptide molecules, such as the rPhl p 4 variant polypeptide of the present invention, for therapy of allergic diseases was appreciated by one of ordinary skilled in the art. To this end, the Examiner is also cordially requested to review the entirety of disclosure contained in the cited reference of Fischer et al. (Journal of Allergy and Clinical Immunology, 1996). Also enclosed is a scientific article by Focke et al. (FASEB Journal, vol. 15, 2042-44, 2001). As evidenced by the disclosure in the Focke et al., it is respectfully submitted that as of the filing date of the present application, the instantly claimed grass pollen allegens could be routinely manipulated and utilized as pharmaceutical preparations in a manner recited in the claims.

In the last paragraph at page 12, the Office Action alleges that it would "the experimentation left to those skilled in the art is unnecessarily and improperly, extensive and undue." These allegations, however, do not present any evidence to doubt the objective enablement of Applicants' disclosure. As clearly and succinctly stated by the court in *In re Marzocchi*, 169 USPQ 367, 369 (CCPA 1971):

> As a matter of Patent Office practice, then a specification disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented **must** be taken in compliance with the enabling requirement of the first paragraph of §112, **unless** there is reason to doubt the objective truth of statements contained therein relied on for enabling support. (emphasis in original)

Furthermore, as stated in *Marzocchi*, at 370, the PTO must have adequate support (evidence or reasoning) for its challenge to the credibility of Appellants' statements of enablement. Thus, in the absence of evidence which demonstrates otherwise, the claims must be taken to satisfy the requirements of 35 U.S.C. § 112, ¶1.

Working examples are not required to establish enablement. As stated by the court *Marzocchi*, at page 369:

> The first paragraph of §112 requires nothing more than objective enablement. How such a teaching is set forth, either by the use of illustrative examples or by broad terminology, is of no importance.

The assertion of undue experimentation in the rejection is merely conclusory. Further, as discussed above, the specification provides more than sufficient guidance to make and use the claimed vaccines and/or pharmaceutical compositions using no more than routine experimentation. Finally, a high level of skill does not establish that one skilled in the art would have reasons to doubt the veracity of the statements in Applicants' specification with respect to the use of the claimed composition in the diagnosis, treatment, and/or prevention of the claimed conditions.

Based on the aforementioned remarks and arguments, further in view of the amendments presented herein, it is respectfully submitted that Applicants' specification provides an enabling disclosure of what is claimed by the present invention. Withdrawal of the rejection under 35 U.S.C. §112, ¶1, is respectfully requested.

Rejections under §102(b)

The contention that the instant claims are anticipated by Fischer et al. (*Journal of Allergy and Clinical Immunology*, 1996) is respectfully traversed.

Fischer teaches decapeptide sequence of Phl p 4 containing ten amino acid residues (IVALPXGMLK) of the N-terminal region of Phl p 4. See, Fig. 5 and the description thereof at page 194 of Fischer et al. Fischer fails to teach or suggest the polypeptides of the present invention, for example, a polypeptides which comprise the sequences set forth in SEQ ID NO: 2, SEQ ID NO: 4, or SEQ ID NO: 6, or a variant of the sequence set forth in SEQ ID NO: 2, with the amino acid variations set forth in clones 1–11. Moreover, the cited reference fails to disclose the structural elements of the claimed fragments, comprising, for example, 50–350 amino acid residues. See, amended claim 21. Absent such, the reference cannot anticipate what is claimed herein.

With respect to Suck et al. (*Clinical & Experimental Allergy*, 2000) and Fahlbusch et al. (*Clinical & Experimental Allergy*, 1998), the §102(b) rejection based on the teachings of the reference(s) is respectfully traversed. Based on the Examiner's rationale at page 31 of the Office Action, it appears that this rejection is based on the cited references' disclosure of the term Phl p 4 polypeptide. The Office Action has not established that such polypeptides are structurally and/or identical to the claimed polypeptide(s) of the present invention. More specifically, the totality of the disclosure in Fisher, Suck and Fahlbusch says nothing about the identity of the polypeptides having the sequences

set forth in SEQ ID NO: 2, 4, or 6 or clones 1–11 of SEQ ID NO: 2, or the specific fragments of said polypeptides. Absent such, the reference(s) cannot anticipate what is claimed herein. It is required that for anticipation, the reference(s) explicitly or inherently disclose the claimed subject matter. See also new claims 35 and 36.

Withdrawal of the rejection is respectfully requested.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response to Deposit Account No. 13-3402.

Respectfully submitted,

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Attorney Docket No.: MERCK-2966

Date: March 18, 2009